65

## SEQUENCE LISTING

<110> BioImage A/S <120> Novel Fluorescent Proteins <130> 25158PC1 <160> 8 <170> FastSEO for Windows Version 3.0 <210> 1 <211> 720 <212> DNA <213> Aequoria Victoria <220> <221> CDS <222> (1)...(717) <400> 1 48 atg gtg agc aag ggc gag gtg ctg ttc acc ggg gtg gtg ccc atc ctg Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu 5 gte gag etg gae gge gae gta aac gge cae aag tte age gtg tee gge 96 Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly 20 gag ggc gag ggc gat gcc acc tac ggc aag ctg acc ctg aag ttc atc 144 Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile tgc acc acc ggc aag ctg ccc gtg ccc tgg ccc aca cta gtg acc acc 192 Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr 50 55 ctg tet tac ggc gtg cag tgc ttc agc cgc tac ccc gac cac atg aag 240 Leu Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys 70 75 cag cac gac tto tto aag too goo atg coo gaa ggo tac gto cag gag 288 Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu 85 95 cgc acc atc ttc ttc aag gac ggc aac tac aag acc cgc gcc gag 336 Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu 100 105 gtg aag ttc gag ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc 384 Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly 115 120 atc gac ttc aag gag gac ggc aac atc ctg ggg cac aag ctg gag tac 432

T10																
116	Asp 130	Phe	Lys	Glu	Asp	Gly 135	Asn	Ile	Leu	Gly	His 140	Lys	Leu	Glu	Tyr	
aac	tac	aac	agc	cac	aac	gtc	tat	atc	atg	gcc	gac	aag	cag	aag	aac	480
	Tyr	Asn	Ser	His		Val	Tyr	Ile	Met	Ala 155	Asp	Lys	Gln	Lys	Asn 160	
145					150					155					100	
	atc															528
Gly	Ile	Lys	Val	Asn 165	Phe	Lys	Ile	Arg	His 170	Asn	Ile	Glu	Asp	Gly 175	Ser	
				165					170					1/5		
	cag															576
Val	Gln	Leu	A1a 180	Asp	HIS	Tyr	GIN	185	Asn	Thr	Pro	тте	190	Asp	GTÀ	
	gtg Val															62 <b>4</b>
PIO	Val	195	Leu	PIO	АБР	ASII	200	TAT	ьеu	ser	1111	205	ser	Ата	Leu	
	aaa Lys															672
261	210	пор	110	AGII	Olu	215	1119	пор	1113	1100	220	Dea	БСС	014	1110	
																717
	acc Thr															717
225				1	230			2		235						
taa																720
cua																, = 0
		210>														
	<2	210> 21 <b>1</b> > 212>	239													
	<2 <2	21 <b>1&gt;</b> 212>	239 PRT	ıoria	a Vio	ctor:	ia									
	<2 <2 <2	211> 212> 213>	239 PRT Aequ	ıoria	a Vio	ctor	ia									
Met	<2 <2 <2	211> 212> 213> 400>	239 PRT Aequ					Phe		Gly	Val	Val	Pro		Leu	
1	<2 <2 <2 Val	211> 212> 213> 400> Ser	239 PRT Aequ 2 Lys	Gly 5	Glu	Glu	Leu		10	_				15		
1	<2 <2 <2	211> 212> 213> 400> Ser	239 PRT Aequ 2 Lys	Gly 5	Glu	Glu	Leu		10	_				15		
1 Val	<2 <2 <2 Val	211> 212> 213> 400> Ser Leu Glu	239 PRT Aequ 2 Lys Asp 20	Gly 5 Gly	Glu Asp	Glu Val	Leu Asn Tyr	Gly 25	10 His	Lys	Phe	Ser Leu	Val 30	15 Ser	Gly	
1 Val Glu	<2 <2 <2 Val Glu	211> 212> 213> 400> Ser Leu Glu 35	239 PRT Aequ 2 Lys Asp 20 Gly	Gly 5 Gly Asp	Glu Asp Ala	Glu Val Thr	Leu Asn Tyr 40	Gly 25 Gly	10 His Lys	Lys Leu	Phe Thr	Ser Leu 45	Val 30 Lys	15 Ser Phe	Gly Ile	
l Val Glu Cys	<2 <2 <2 Val Glu Gly Thr 50	211> 212> 213> 400> Ser Leu Glu 35 Thr	239 PRT Aequ 2 Lys Asp 20 Gly	Gly 5 Gly Asp	Glu Asp Ala Leu	Glu Val Thr Pro 55	Leu Asn Tyr 40 Val	Gly 25 Gly Pro	10 His Lys Trp	Lys Leu Pro	Phe Thr Thr 60	Ser Leu 45 Leu	Val 30 Lys Val	15 Ser Phe Thr	Gly Ile Thr	
l Val Glu Cys Leu	<2 <2 <2 Val Glu Gly Thr	211> 212> 213> 400> Ser Leu Glu 35 Thr	239 PRT Aequ 2 Lys Asp 20 Gly	Gly 5 Gly Asp	Glu Asp Ala Leu Gln	Glu Val Thr Pro 55	Leu Asn Tyr 40 Val	Gly 25 Gly Pro	10 His Lys Trp	Lys Leu Pro Tyr	Phe Thr Thr 60	Ser Leu 45 Leu	Val 30 Lys Val	15 Ser Phe Thr	Gly Ile Thr Lys	
1 Val Glu Cys Leu 65	<2 <2 <2 Val Glu Gly Thr 50 Ser	211> 212> 213> 400> Ser Leu Glu 35 Thr	239 PRT Aequ 2 Lys Asp 20 Gly Gly	Gly 5 Gly Asp Lys Val	Glu Asp Ala Leu Gln 70	Glu Val Thr Pro 55 Cys	Leu Asn Tyr 40 Val	Gly 25 Gly Pro	10 His Lys Trp Arg	Lys Leu Pro Tyr 75	Phe Thr Thr 60 Pro	Ser Leu 45 Leu Asp	Val 30 Lys Val	15 Ser Phe Thr Met	Gly Ile Thr Lys 80	
1 Val Glu Cys Leu 65 Gln	<pre>&lt;2 &lt;2 &lt;2 Val Glu Gly Thr 50 Ser His</pre>	211> 212> 213> 400> Ser Leu Glu 35 Thr Tyr	239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly	Gly 5 Gly Asp Lys Val Phe 85	Glu Asp Ala Leu Gln 70 Lys	Glu Val Thr Pro 55 Cys Ser	Leu Asn Tyr 40 Val Phe	Gly 25 Gly Pro Ser Met	10 His Lys Trp Arg Pro	Lys Leu Pro Tyr 75 Glu	Phe Thr Thr 60 Pro	Ser Leu 45 Leu Asp	Val 30 Lys Val His	15 Ser Phe Thr Met Gln 95	Gly Ile Thr Lys 80 Glu	
1 Val Glu Cys Leu 65 Gln	<2 <2 <2 Val Glu Gly Thr 50 Ser	211> 212> 213> 400> Ser Leu Glu 35 Thr Tyr	239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly Phe	Gly 5 Gly Asp Lys Val Phe 85	Glu Asp Ala Leu Gln 70 Lys	Glu Val Thr Pro 55 Cys Ser	Leu Asn Tyr 40 Val Phe	Gly 25 Gly Pro Ser Met	10 His Lys Trp Arg Pro	Lys Leu Pro Tyr 75 Glu	Phe Thr Thr 60 Pro	Ser Leu 45 Leu Asp	Val 30 Lys Val His Val	15 Ser Phe Thr Met Gln 95	Gly Ile Thr Lys 80 Glu	
1 Val Glu Cys Leu 65 Gln Arg	<pre>&lt;2 &lt;2 &lt;2 Val Glu Gly Thr 50 Ser His</pre>	211> 212> 213> 400> Ser Leu 35 Thr Tyr Asp	239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly Phe 100	Gly 5 Gly Asp Lys Val Phe 85 Phe	Glu Asp Ala Leu Gln 70 Lys	Glu Val Thr Pro 55 Cys Ser Asp	Leu Asn Tyr 40 Val Phe Ala Asp	Gly 25 Gly Pro Ser Met Gly 105	10 His Lys Trp Arg Pro 90 Asn	Lys Leu Pro Tyr 75 Glu	Phe Thr Thr 60 Pro Gly Lys	Ser Leu 45 Leu Asp Tyr	Val 30 Lys Val His Val Arg 110	15 Ser Phe Thr Met Gln 95 Ala	Gly Ile Thr Lys 80 Glu Glu	
1 Val Glu Cys Leu 65 Gln Arg	<pre> <pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	211> 212> 213> 400> Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115	239 PRT Aequal A	Gly 5 Gly Asp Lys Val Phe 85 Phe	Glu Asp Ala Leu Gln 70 Lys Lys Asp	Glu Val Thr Pro 55 Cys Ser Asp	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120	Gly 25 Gly Pro Ser Met Gly 105 Val	10 His Lys Trp Arg Pro 90 Asn	Lys Leu Pro Tyr 75 Glu Tyr Arg	Phe Thr Thr 60 Pro Gly Lys Ile	Ser Leu 45 Leu Asp Tyr Thr Glu 125	Val 30 Lys Val His Val Arg 110 Leu	15 Ser Phe Thr Met Gln 95 Ala	Gly Ile Thr Lys 80 Glu Glu Glu	
1 Val Glu Cys Leu 65 Gln Arg	<pre><? <pre><? <pre></pre> <pre></pre> <pre></pre> <pre>Compare the compare t</pre>	211> 212> 213> 400> Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115	239 PRT Aequal A	Gly 5 Gly Asp Lys Val Phe 85 Phe	Glu Asp Ala Leu Gln 70 Lys Lys Asp	Glu Val Thr Pro 55 Cys Ser Asp	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120	Gly 25 Gly Pro Ser Met Gly 105 Val	10 His Lys Trp Arg Pro 90 Asn	Lys Leu Pro Tyr 75 Glu Tyr Arg	Phe Thr Thr 60 Pro Gly Lys Ile	Ser Leu 45 Leu Asp Tyr Thr Glu 125	Val 30 Lys Val His Val Arg 110 Leu	15 Ser Phe Thr Met Gln 95 Ala	Gly Ile Thr Lys 80 Glu Glu Glu	
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn	<pre> <pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	211> 212> 213> 400> Ser Leu 35 Thr Tyr Asp Ile Phe 115 Phe	239 PRT Aequal 2 Lys Asp 20 Gly Gly Phe Phe 100 Glu Lys	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn	Gly 25 Gly Pro Ser Met Gly 105 Val	10 His Lys Trp Arg Pro 90 Asn Asn Leu	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala	Phe Thr Thr 60 Pro Gly Lys Ile His 140	Ser Leu 45 Leu Asp Tyr Thr Glu 125 Lys	Val 30 Lys Val His Val Arg 110 Leu	15 Ser Phe Thr Met Gln 95 Ala Lys Glu	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn	
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145	Val Glu Gly Thr 50 Ser His Thr Lys Asp 130 Tyr	211> 212> 213> 400> Ser Leu 35 Thr Tyr Asp Ile Phe 115 Phe Asn	239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly Phe 100 Glu Lys	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu His	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr	Gly 25 Gly Pro Ser Met Gly 105 Val Ile	10 His Lys Trp Arg Pro 90 Asn Asn Leu Met	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155	Thr Thr 60 Pro Gly Lys Ile His 140 Asp	Ser Leu 45 Leu Asp Tyr Thr Glu 125 Lys Lys	Val 30 Lys Val His Val Arg 110 Leu Leu	15 Ser Phe Thr Met Gln 95 Ala Lys Glu Lys	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160	
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145	<pre> </pre> <pre> </pre> <pre> </pre> <pre> <pre> <pre> </pre> <pre> <p< td=""><td>211&gt; 212&gt; 213&gt; 400&gt; Ser Leu 35 Thr Tyr Asp Ile Phe 115 Phe Asn</td><td>239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly Phe 100 Glu Lys</td><td>Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu His</td><td>Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp</td><td>Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val</td><td>Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr</td><td>Gly 25 Gly Pro Ser Met Gly 105 Val Ile</td><td>10 His Lys Trp Arg Pro 90 Asn Asn Leu Met</td><td>Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155</td><td>Thr Thr 60 Pro Gly Lys Ile His 140 Asp</td><td>Ser Leu 45 Leu Asp Tyr Thr Glu 125 Lys Lys</td><td>Val 30 Lys Val His Val Arg 110 Leu Leu</td><td>15 Ser Phe Thr Met Gln 95 Ala Lys Glu Lys</td><td>Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160</td><td></td></p<></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	211> 212> 213> 400> Ser Leu 35 Thr Tyr Asp Ile Phe 115 Phe Asn	239 PRT Aequ 2 Lys Asp 20 Gly Gly Gly Phe 100 Glu Lys	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu His	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr	Gly 25 Gly Pro Ser Met Gly 105 Val Ile	10 His Lys Trp Arg Pro 90 Asn Asn Leu Met	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155	Thr Thr 60 Pro Gly Lys Ile His 140 Asp	Ser Leu 45 Leu Asp Tyr Thr Glu 125 Lys Lys	Val 30 Lys Val His Val Arg 110 Leu Leu	15 Ser Phe Thr Met Gln 95 Ala Lys Glu Lys	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160	

Val	Gln	Leu	Ala 180	Asp	His	Tyr	Gln	Gln 185	Asn	Thr	Pro	Ile	Gly 190	Asp	Gly	
Pro	Val	Leu 195	Leu	Pro	Asp	Asn	His 200	Tyr	Leu	Ser	Thr	Gln 205	Ser	Ala	Leu	
Ser	Lys 210	Asp	Pro	Asn	Glu	Lys 215	Arg	Asp	His	Met	Val 220	Leu	Leu	Glu	Phe	
Val 225	Thr	Ala	Ala	Gly	11e 230	Thr	Leu	Gly	Met	Asp 235	Glu	Leu	Tyr	Lys		
	<2 <2	210> 211> 212> 213>	720 DNA	ıoria	a Vic	ctori	la									
	<2	220> 221> 222>		(*	717)											
atg Met 1	<f gtg Val</f 	100> agc Ser	aag	ggc Gly 5	gag Glu	gag Glu	ctg Leu	ttc Phe	acc Thr 10	ggg Gly	gtg Val	gtg Val	ccc Pro	atc Ile 15	ctg Leu	48
gtc Val	gag Glu	ctg Leu	gac Asp 20	ggc Gly	gac Asp	gta Val	aac Asn	ggc Gly 25	cac His	aag Lys	ttc Phe	agc Ser	gtg Val 30	tcc Ser	ggc Gly	96
gag Glu	ggc Gly	gag Glu 35	ggc Gly	gat Asp	gcc Ala	acc Thr	tac Tyr 40	ggc Gly	aag Lys	ctg Leu	acc Thr	ctg Leu 45	aag Lys	ttc Phe	atc Ile	144
tgc Cys	acc Thr 50	acc Thr	ggc Gly	aag Lys	ctg Leu	ccc Pro 55	gtg Val	ccc Pro	tgg Trp	ccc Pro	aca Thr 60	cta Leu	gtg Val	acc Thr	acc Thr	192
ctg Leu 65	tct Ser	tac Tyr	ggc Gly	gtg Val	cag Gln 70	tgc Cys	ttc Phe	agc Ser	cgc Arg	tac Tyr 75	ccc Pro	gac Asp	cac His	atg Met	aag Lys 80	240
cag Gln	cac His	gac Asp	ttc Phe	ttc Phe 85	aag Lys	tcc Ser	gcc Ala	atg Met	ccc Pro 90	gaa Glu	ggc Gly	tac Tyr	gtc Val	cag Gln 95	gag Glu	288
	acc Thr															336
gtg Val	aag Lys	ttc Phe 115	gag Glu	ggc Gly	gac Asp	acc Thr	ctg Leu 120	gtg Val	aac Asn	cgc Arg	atc Ile	gag Glu 125	ctg Leu	aag Lys	ggc Gly	384
atc Ile	gac Asp 130	ttc Phe	aag Lys	gag Glu	gac Asp	ggc Gly 135	aac Asn	atc Ile	ctg Leu	ggg Gly	cac His 140	aag Lys	ctg Leu	gag Glu	tac Tyr	432
	tac Tyr															480

145 150 155 160

145					150					155					160		
ggc Gly	atc Ile	aag Lys	gtg Val	aac Asn 165	ttc Phe	aag Lys	atc Ile	cgc Arg	cac His 170	aac Asn	atc Ile	gag Glu	gac Asp	ggc Gly 175	agc Ser	528	
gtg Val	cag Gln	ctc Leu	gcc Ala 180	gac Asp	cac His	tac Tyr	cag Gln	cag Gln 185	aac Asn	acc Thr	ccc Pro	atc Ile	ggc Gly 190	gac Asp	ggc Gly	576	
ccc Pro	gtg Val	ctg Leu 195	ctg Leu	ccc Pro	gac Asp	aac Asn	cac His 200	tac Tyr	ctg Leu	agc Ser	acc Thr	cag Gln 205	tcc Ser	gcc Ala	ctg Leu	624	
agc Ser	aaa Lys 210	gac Asp	ccc Pro	aac Asn	gag Glu	aag Lys 215	cgc Arg	gat Asp	cac His	atg Met	gtc Val 220	ctc Leu	cta Leu	ggg Gly	ttc Phe	672	
gtg Val 225	acc Thr	gcc Ala	gcc Ala	ggg	atc Ile 230	act Thr	ctc Leu	ggc Gly	atg Met	gac Asp 235	gag Glu	ctg Leu	tac Tyr	aag Lys		717	
taa																720	
	<2 <2	210> 211> 212> 213>	239	uori	a Vio	ctor:	ia										
			_														
	<	400> Ser	4 Lys					Phe		Gly	Val	Val	Pro	Ile	Leu		
1	< Val	Ser	Lys Asp	Gly 5	Glu	Glu	Leu	Gly	10				Val	15			
1 Val	< Val Glu	Ser Leu Glu	Lys Asp 20	Gly 5 Gly	Glu Asp	Glu Val	Leu Asn Tyr		10 His	Lys	Phe	Ser	Val 30	15 Ser	Gly		
1 Val Glu	Val Glu Gly Thr	Ser Leu Glu 35	Lys Asp 20 Gly	Gly 5 Gly Asp	Glu Asp Ala	Glu Val Thr	Leu Asn Tyr 40	Gly 25	10 His Lys	Lys Leu	Phe Thr	Ser Leu 45	Val 30 Lys	15 Ser Phe	Gly Ile		
1 Val Glu Cys Leu	Val Glu Gly Thr 50 Ser	Ser Leu Glu 35 Thr	Asp 20 Gly Gly	Gly 5 Gly Asp Lys Val	Glu Asp Ala Leu Gln 70	Glu Val Thr Pro 55 Cys	Leu Asn Tyr 40 Val	Gly 25 Gly Pro	10 His Lys Trp Arg	Lys Leu Pro Tyr 75	Phe Thr Thr 60 Pro	Ser Leu 45 Leu Asp	Val 30 Lys Val	Ser Phe Thr	Gly Ile Thr Lys 80		
1 Val Glu Cys Leu 65 Gln	Val Glu Gly Thr 50 Ser	Ser Leu Glu 35 Thr Tyr	Asp 20 Gly Gly Gly Phe	Gly 5 Gly Asp Lys Val Phe	Glu Asp Ala Leu Gln 70 Lys	Glu Val Thr Pro 55 Cys	Leu Asn Tyr 40 Val Phe	Gly 25 Gly Pro Ser Met	10 His Lys Trp Arg Pro	Lys Leu Pro Tyr 75 Glu	Phe Thr Thr 60 Pro	Ser Leu 45 Leu Asp	Val 30 Lys Val His	Ser Phe Thr Met Gln 95	Gly Ile Thr Lys 80 Glu		
1 Val Glu Cys Leu 65 Gln Arg	Val Glu Gly Thr 50 Ser His	Ser Leu Glu 35 Thr Tyr Asp	Asp 20 Gly Gly Gly Phe	Gly 5 Gly Asp Lys Val Phe 85 Phe	Glu Asp Ala Leu Gln 70 Lys	Glu Val Thr Pro 55 Cys Ser Asp	Leu Asn Tyr 40 Val Phe Ala Asp	Gly 25 Gly Pro Ser Met Gly 105	10 His Lys Trp Arg Pro 90 Asn	Lys Leu Pro Tyr 75 Glu	Phe Thr Thr 60 Pro Gly Lys	Ser Leu 45 Leu Asp Tyr	Val 30 Lys Val His Val Arg 110	Phe Thr Met Gln 95 Ala	Gly Ile Thr Lys 80 Glu Glu		
1 Val Glu Cys Leu 65 Gln Arg	Val Glu Gly Thr 50 Ser His Thr	Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115	Asp 20 Gly Gly Gly Phe 100 Glu	Gly 5 Gly Asp Lys Val Phe 85 Phe	Glu Asp Ala Leu Gln 70 Lys Lys Asp	Glu Val Thr Pro 55 Cys Ser Asp	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120	Gly 25 Gly Pro Ser Met Gly 105 Val	10 His Lys Trp Arg Pro 90 Asn	Lys Leu Pro Tyr 75 Glu Tyr Arg	Phe Thr Thr 60 Pro Gly Lys	Ser Leu 45 Leu Asp Tyr Thr Glu 125	Val 30 Lys Val His Val Arg 110 Leu	Phe Thr Met Gln 95 Ala	Gly Ile Thr Lys 80 Glu Glu		
1 Val Glu Cys Leu 65 Gln Arg Val	Val Glu Gly Thr 50 Ser His Thr Lys Aspp 130	Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115 Phe	Asp 20 Gly Gly Gly Phe 100 Glu	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu	Glu Asp Ala Leu Gln 70 Lys Lys Asp	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn	Gly 25 Gly Pro Ser Met Gly 105 Val	10 His Lys Trp Arg Pro 90 Asn Asn	Lys Leu Pro Tyr 75 Glu Tyr Arg	Phe Thr Thr 60 Pro Gly Lys Ile His 140	Leu 45 Leu Asp Tyr Thr Glu 125 Lys	Val 30 Lys Val His Val Arg 110 Leu	Phe Thr Met Gln 95 Ala Lys Glu	Gly Ile Thr Lys 80 Glu Glu Gly Tyr		
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145	Val Glu Gly Thrr 50 Ser His Thr Lys Asp	Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115 Phe	Asp 20 Gly Gly Phe Phe 100 Glu Lys	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn	Gly 25 Gly Pro Ser Met Gly 105 Val Ile	10 His Lys Trp Arg Pro 90 Asn Leu Met	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155	Thr Thr 60 Pro Gly Lys Ile His 140 Asp	Leu 45 Leu Asp Tyr Thr Glu 125 Lys	Val 30 Lys Val His Val Arg 110 Leu	Phe Thr Met Gln 95 Ala Lys Glu Lys	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160		
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145 Gly	Val Glu Gly Thr 50 Ser His Thr Lys Asp 130 Tyr	Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115 Phe	Asp 20 Gly Gly Phe 100 Glu Lys	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu His	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp Asn 150 Phe	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr	Gly 25 Gly Pro Ser Met Gly 105 Val Ile Ile Arg	10 His Lys Trp Arg Pro 90 Asn Asn Leu His 170	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155 Asn	Thr Thr 60 Pro Gly Lys Ile Hiss 140 Asp	Leu 45 Leu Asp Tyr Thr Glu 125 Lys	Val 30 Lys Val His Val Arg 110 Leu Gln	Phe Thr Met Gln 95 Ala Lys Glu Lys Gly 175	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160 Ser		
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145 Gly Val	Val Glu Gly Thr 50 Ser His Thr Lys Asp 130 Tyr Ile	Ser Leu Glu 35 Thr Tyr Asp Ile Phee 115 Phe Lys	Lys Asp 20 Gly Gly Gly Phe 100 Glu Lys Ser Val	Gly 5 Gly Asp Lys Val Phe 85 Phe Gly Glu His Asn 165 Asp	Glu Asp Ala Leu Gln 70 Lys Asp Asp Asp Asn 150 Phe	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val Lys	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr Ile	Gly 25 Gly Pro Ser Met Gly 105 Val Ile Arg Gln 185	10 His Lys Trp Arg Pro 90 Asn Leu Met His 170 Asn	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Alas 155 Asn	Thr for Gly Lys Ile His 140 Asp	Leu 45 Leu Asp Tyr Thr Glu 125 Lys Glu Ile	Val 30 Lys Val His Val Arg 110 Leu Gln Asp Gly	Phe Thr Met Gln 95 Ala Lys Glu Lys Gly Asp	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160 Ser Gly		
1 Val Glu Cys Leu 65 Gln Arg Val Ile Asn 145 Gly Val	<pre>&lt;<val 130="" 50="" asp="" gln="" glu="" gly="" his="" ile="" lys="" pre="" ser="" thr="" tyr="" val<=""></val></pre>	Ser Leu Glu 35 Thr Tyr Asp Ile Phe 115 Phe Asn Lys Leu 195	Asp 20 Gly Gly Phe 1000 Glu Lys Ser Val	Gly 5 Gly Asp Lys Val Phee 85 Phe Gly Glu His Asn 165 Asp	Glu Asp Ala Leu Gln 70 Lys Lys Asp Asp Asn 150 Phe His	Glu Val Thr Pro 55 Cys Ser Asp Thr Gly 135 Val Lys Tyr	Leu Asn Tyr 40 Val Phe Ala Asp Leu 120 Asn Tyr Ile Gln Hiss 200	Gly 25 Gly Pro Ser Met Gly 105 Val Ile Arg Gln 185 Tyr	10 His Lys Trp Arg Pro 90 Asn Asn Leu His 170 Asn Leu	Lys Leu Pro Tyr 75 Glu Tyr Arg Gly Ala 155 Asn Thr	Thr Thr 60 Pro Gly Lys Ile Hiss 140 Asp	Ser Leu 45 Leu Asp Tyr Thr Glu 125 Lys Glu Ile	Val 30 Lys Val His Val Arg 110 Leu Gln Asp Gly 190 Ser	Phe Thr Met Gln 95 Ala Lys Glu Lys Asp Ala	Gly Ile Thr Lys 80 Glu Glu Gly Tyr Asn 160 Ser Gly Leu		

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Gly Phe

210 215 220 Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys 225 235 <210> 5 <211> 717 <212> DNA <213> Aequoria Victoria <220> <221> CDS <222> (1)...(714) <400> 5 atg agt aaa gga gaa gaa ctt ttc act gga gtt gtc cca att ctt gtt 48 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val gaa tta gat ggc gat gtt aat ggg caa aaa ttc tct gtt agt gga gag 96 Glu Leu Asp Gly Asp Val Asn Gly Gln Lys Phe Ser Val Ser Gly Glu 25 ggt gaa ggt gat gca aca tac gga aaa ctt acc ctt aaa ttt att tgc 144 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys 35 act act ggg aag cta cct gtt cca tgg cca acg ctt gtc act act ctc 192 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu 50 tot tat ggt gtt caa tgc ttt tct aga tac cca gat cat atg aaa cag 240 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln cat gac ttt ttc aag agt gcc atg ccc gaa ggt tat gta cag gaa aga 288 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg act ata ttt tac aaa gat gac ggg aac tac aag aca cgt gct gaa gtc 336 Thr Ile Phe Tyr Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val 100 105 aag ttt gaa ggt gat acc ctt gtt aat aga atc gag tta aaa ggt att 384 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile 115 gat ttt aaa gaa gat gga aac att ctt gga cac aaa atg gaa tac aat 432 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Met Glu Tyr Asn 130 135 tat aac tca cat aat gta tac atc atg gca gac aaa cca aag aat ggc 480 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Pro Lys Asn Gly 150 atc aaa gtt aac ttc aaa att aga cac aac att aaa gat gga agc gtt 528 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Lys Asp Gly Ser Val

170

175

165

		gca Ala														576
-		tta Leu 195		-				_		-			-			624
		ccc Pro										Leu				672
		gct Ala														714
taa																717
	<2 <2	210> 211> 212> 213>	238 PRT	uoria	a Vio	ctori	ia									
	< 4	100>	6													
Met 1	Ser	Lys	Gly	Glu 5	Glu	Leu	Phe	Thr	Gly 10	Val	Val	Pro	Ile	Leu 15	Val	
	Leu	Asp		-	Val	Asn	Gly	Gln 25		Phe	Ser	Val	Ser 30		Glu	
Gly	Glu	Gly	20 Asp	Ala	Thr	Tyr			Leu	Thr	Leu	_		Ile	Cys	
Thr		35 Gly	Lys	Leu	Pro		40 Pro	Trp	Pro	Thr		45 Val	Thr	Thr	Leu	
	50 Tyr	Gly	Val	Gln	-	55 Phe	Ser	Arg	Tyr		60 Asp	His	Met	Lys		
65 His	Asp	Phe	Phe	Lys	70 Ser	Ala	Met	Pro	Glu	75 Gly	Tyr	Val	Gln	Glu	80 Arg	
Thr	Ile	Phe	Tyr	85 Lys	Asp	Asp	Gly	Asn	90 Tyr	Lys	Thr	Arg	Ala	95 Glu	Val	
T	Dh.	C1	100	7	mb	T	17-1	105	7	T1 -	C1	T	110	C1	Tla	
ьуѕ	rne	Glu 115	GIY	Asp	1111	ьеи	120	ASII	Arg	ше	GIU	125	туу	СтУ	TIE	
Asp	Phe 130	Lys	Glu	Asp	Gly	Asn 135	Ile	Leu	Gly	His	Lys 140	Met	Glu	Tyr	Asn	
Tyr 145	Asn	Ser	His	Asn	Val 150		Ile	Met	Ala	Asp 155	Lys	Pro	Lys	Asn	Gly 160	
	Lys	Val	Asn			Ile	Arg	His			Lys	Asp	Gly			
Gln	Leu	Ala	-	165 His	Tyr	Gln	Gln		170 Thr	Pro	Ile	Gly	_	175 Gly	Pro	
Val	Leu	Leu	180 Pro	Asp	Asn	His		185 Leu	Ser	Thr	Gln		190 Ala	Leu	Ser	
Lys	Asp	195 Pro	Asn	Glu	Lys	Arg	200 Asp	His	Met	Ile	Leu	205 Leu	Glu	Phe	Val	
	210 Ala	Ala	Gly	Ile		215 His	Gly	Met	Asp		220 Gly	Tyr	Lys			
225					230					235						

<211> 717

<212> DNA <213> Aequovia Victoria <220> <221> CDS <222> (1)...(717) <400> 7 atg agt aaa gga gaa ctt ttc act gga gtt gtc cca att ctt gtt 48 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 10 gaa tta gat ggc gat gtt aat ggg caa aaa ttc tct gtt agt gga gag 96 Glu Leu Asp Gly Asp Val Asn Gly Gln Lys Phe Ser Val Ser Gly Glu ggt gaa ggt gat gca aca tac gga aaa ctt acc ctt aaa ttt att tgc 144 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys 35 40 act act ggg aag cta cct gtt cca tgg cca acg ctt gtc act act ctc 192 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu tet tat ggt gtt caa tgc ttt tet aga tac eea gat eat atg aaa eag 240 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln cat gac ttt ttc aag agt gcc atg ccc gaa ggt tat gta cag gaa aga 288 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg 90 act ata ttt tac aaa gat gac ggg aac tac aag aca cgt gct gaa gtc 336 Thr Ile Phe Tyr Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val 100 aag ttt gaa ggt gat acc ctt gtt aat aga atc gag tta aaa ggt att 384 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile 115 120 gat ttt aaa gaa gat gga aac att ctt gga cac aaa atg gaa tac aat 432 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Met Glu Tvr Asn 130 135 tat aac tca cat aat gta tac atc atg gca gac aaa cca aag aat ggc 480 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Pro Lys Asn Gly atc aaa gtt aac ttc aaa att aga cac aac att aaa gat gga agc gtt 528 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Lys Asp Gly Ser Val 165 170 caa tta gca gac cat tat caa caa aat act cca att ggc gat ggc cct 576 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro 180 185

gtc ctt tta cca gac aac cat tac ctg tcc acg caa tct gcc ctt tcc

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser

195

aaa gat ccc aac gaa aag aga gat cac atg atc ctc cta ggg ttt gta

Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Leu Leu Gly Phe Val

210

aca gct gct ggg att aca cat ggc atg gat gaa cta tac aaa taa

717

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys \*

230

624

625

<210> 8 <211> 238 <212> PRT

<213> Aequovia Victoria

<400> 8 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly Gln Lys Phe Ser Val Ser Gly Glu 25 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys 40 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln 70 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Tyr Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val 105 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile 120 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Met Glu Tyr Asn 135 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Pro Lys Asn Gly 150 155 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Lys Asp Gly Ser Val 165 170 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro 185 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser 200 Lys Asp Pro Asn Glu Lys Arg Asp His Met Ile Leu Leu Gly Phe Val 215 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys 230